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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/687,215 | 10/15/2003 | Mary G. Dowling | CISCO-8437 (032590-224) | 8067 |

49715 7590 09/02/2008

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| EXAMINER | |
|---|---|
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| ART UNIT | PAPER NUMBER |
|---|---|
| 2619 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 09/02/2008 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/687,215 | DOWLING, MARY G. | |
| | Examiner | Art Unit | |
| | ROBERT W. WILSON | 2619 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *24 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1 and 58-129* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 58-129* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 58-73, 75-77, 81-95, 99-113, 115-117, 121-124 & 127-129 are rejected under 35 U.S.C. 103(a) as being unpatentable over Backes (U.S. Patent No.: 5,018,137) in view of Perlman (U.S. Patent No.: 5,574,860)

Referring to claim 1, Backes teaches: A method for discovering and configuring network devices into a cluster said method (Fig 1 performs the method) comprising:

automatically detecting candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets (All bridges automatically receive and detect BPDU or discovery packets from all of the bridges in the network or candidates. The bridges inherently periodically transmit the BPDU or discovery packets periodically per col. 5 line 1 to col. 9 line 62)

determining whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packet received from the candidate devices (BPDU are evaluated from the bridges or candidate devices in order to determine which bridges will be designated as daughter bridge and which bridge will be designated as a root or designated bridge. All bridges which do not have the lowest path cost are qualified to be daughter bridges per col. 5 line 1 to col. 9 line 62)

Backes does not expressly call for: presenting to a user a list of the candidate network devices that are qualified to join the cluster

Perlman teaches: presenting to a user a list of the candidate network devices that are qualified to join the cluster (Designated node sends a complete list of all nodes in the network per col. 6 lines 22 to 48)

It would have been obvious to add presenting to a user a list of the candidate network devices that are qualified to join the cluster of Perlman to the system of Backes in order to insure all nodes are aware of the other nodes in the network.

In addition Backes teaches:

Regarding claim 58 wherein the candidate network device transmit the discovery packet to a multicast address (The bridges inherently multicast the BPDU or multicast per col. 5 line 1 to col. 9 line 62)

Regarding claim 59, wherein the discovery packets comprise layer 2 messages (BPDU are bridge PDU or inherently layer 2 messages per col. 5 line 1 to col. 9 line 62)

Regarding claim 60 wherein the discovery packets comprise Media Access Control (MAC) layer message (MAC col. 5 line 1 to col. 9 line 62)

Regarding claim 61, wherein the discovery packets include cluster-capability information of the candidate device transmitting the discovery packets (The BPDU contain configuration or cluster-capability information of the bridge transmitting the packet per col. 5 line 1 to col. 9 line 62)

Regarding claim 62 wherein the discovery packet includes candidate device is not an active member of another cluster (only members of the network send the BPDU consequently they cannot be members of another spanning tree or cluster per col. 5 line 1 to col. 9 line 62)

Regarding claim 63, further comprising maintaining, at each of the candidate devices a database containing information about neighbor candidate devices (Each daughter stores a forwarding list per col. 5 line 1 to col. 9 line 62)

Regarding claim 64, further comprising transmitting in response to said adding the information about the neighbor candidate information to the commander network device from each member network which just joined the cluster (Each daughter uses forwarding list to forward packets per col. 5 line 1 to col. 9 line 62)

Regarding claim 65, presenting to a user list of the candidate network devices qualified to join the cluster prior to said adding (Each bridge has a forwarding table per col. 5 line 1 to col. 9 line 62)

Regarding claim 127, wherein all communication with network devices in the cluster is through a single network address assigned to the commander network device (All communication from the bridges to the root bridge is sent to the root bridge which has a unique identifier per col. 5 lines 19 to line 50)

Referring to claim 66, Backes teaches: a method for discovering candidate network devices to be configured into a cluster of network devices and managed via a commander network device (Figure 1 performs the method) the method comprising:

Automatically detecting at the commander network device, first candidate network devices by receiving discovery packet from the candidate network devices direction connected to the

commander network device (The root bridge or commander receives inherent BPDUs or discovery packets from the other bridges (candidate network devices including first candidate) per col. 5 line 1 to col. 9 line 62), the candidate network devices periodically transmitting the discovery packets the discovery packets including information indicating that the candidate network device is cluster-capable (The bridges send a BPDU or discovery packet which includes cost or qualification to be cluster-capable per col. 5 line 1 to col. 9 line 62)

Determining whether any of the first candidate network devices is qualified to join the cluster by applying qualification rules to the discovery packets (BPDU are evaluated from the bridges or candidate devices in order to determine which bridges will be designated as daughter bridge and which bridge will be designated as a root or designated bridge. All bridges which do not have the lowest path cost are qualified to be daughter bridges per col. 5 line 1 to col. 9 line 62)

Backes does not expressly call for: presenting to a user a list of the candidate network devices that are qualified to join the cluster

Perlman teaches: presenting to a user a list of the candidate network devices that are qualified to join the cluster (Designated node sends a complete list of all nodes in the network per col. 6 lines 22 to 48)

It would have been obvious to add presenting to a user a list of the candidate network devices that are qualified to join the cluster of Perlman to the system of Backes in order to insure all nodes are aware of the other nodes in the network.

In addition Backes teaches:

Regarding claim 67, wherein the discovery packets comprise layer 2 messages (BPDU are bridge PDU or inherently layer 2 messages per col. 5 line 1 to col. 9 line 62)

Regarding claim 68 wherein the discovery packet includes candidate device is not an active member of another cluster (only members of the network send the BPDU consequently they cannot be members of another spanning tree or cluster per col. 5 line 1 to col. 9 line 62)

Regarding claim 69, further comprising storing the information received form the candidate network devices in a database of the commander network device (Each bridge including the root or commander has a has a forwarding table which store this information per col. 5 line 1 to col. 9 line 62)

Regarding claim 70, further comprising maintaining at each of the candidate network devices, a neighbor device database containing information about other candidate network devices directly connected to the candidate device (Each bridge including the root or commander has a has a forwarding table which store this information per col. 5 line 1 to col. 9 line 62)

Regarding claim 71, further comprising adding one or more of the first candidate network devices to the cluster, each of the added first candidate devices becoming a member of the cluster (The root adds bridges to become daughters or members of the cluster per col. 5 line 1 to col. 9 line 62)

Regarding claim 72, further comprising adding one or more of the first candidate network devices to the cluster each of the added first candidate devices becoming a member of the cluster (The root adds bridges to become daughters or members of the cluster per col. 5 line 1 to col. 9 line 62)

Referring to claim 73, the combination of Backes and Perlman teach: the method of claim 72.

Backes does not expressly call for: transmitting in response to the adding the neighbor device database information to the commander network device from member network device which just joined the cluster

Perlman teaches: transmitting in response to the adding the neighbor device database information to the commander network device from member network device which just joined the cluster (DN Hello which has interrelationship per col. 5 line 20 to col. 6 line 49)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the transmitting in response to the adding the neighbor device database information to the commander network device from member network device which just joined the cluster of Perlman to the system of the combination of Backes and Perlman in order to build a system in which all of the network nodes is aware of the status of nodes in the network.

Referring to claim 75, the combination of Backes and Perlman teach: the method of claim 73.

Backes does not expressly call for: automatically detecting at the commander network device, second candidate network devices connected to the member network device which just joined the cluster by receiving the neighbor device database information from the member network device

Perlman teaches: automatically detecting at the commander network device, second candidate network devices connected to the member network device which just joined the cluster by receiving the neighbor device database information from the member network device (DN Hello which has interrelationship per col. 5 line 20 to col. 6 line 49)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add automatically detecting at the commander network device, second candidate network devices connected to the member network device which just joined the cluster by receiving the neighbor device database information from the member network device of Perlman to the system of the combination of Backes and Perlman in order to build a system in which all of the network nodes is aware of the status of nodes in the network.

In addition Backes teaches:

Regarding claim 76, storing the received neighbor device database information in a database of the commander network device (Each bridge including the root has a forwarding table or database per col. 5 line 1 to col. 9 line 62)

Referring to claim 77, the combination of Backes and Perlman teach: the method in accordance with claim 75.

Backes does not expressly call for: presenting to a user a list of the first and second candidate network devices qualified to join the cluster

Perlman teaches: presenting to a user a list of the first and second candidate network devices qualified to join the cluster (DN Hello which has interrelationship per col. 5 line 20 to col. 6 line 49)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add presenting to a user a list of the first and second candidate network devices qualified to join the cluster of Perlman to the system of the combination of Backes and Perlman in order to build a system in which all of the network nodes is aware of the status of nodes in the network.

Referring to claim 81, Backes teaches: A commander network device for discovering and configuring network devices into a cluster said commander network device comprising (Fig 3 is the processor which performs at the root or commander network device ) comprising:

Discovery logic automatically detecting candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets (The ports and processing unit per Fig or discovery logic automatically receive and detect BPDU or discovery packets from all of the bridges in the network or candidates. The bridges inherently periodically transmit the BPDU or discovery packets periodically per col. 5 line 1 to col. 9 line 62)

Qualification rule circuit circuitry to determine whether any of the candidate devices is qualified to join the cluster by applying qualification rule of the discovery packet received from the candidate device (Processing Unit per Fig 3 or qualification rule circuitry evaluates BPDUs from the bridges or candidate devices in order to determine which bridges will be designated as daughter bridge and which bridge will be designated as a root or designated bridge. All bridges which do not have the lowest path cost are qualified to be daughter bridges per col. 5 line 1 to col. 9 line 62)

Backes does not expressly call for: the device further configured to present to a user a list of the candidate network devices that are qualified to join the cluster

Perlman teaches: the device further configured to present to a user a list of the candidate network devices that are qualified to join the cluster (Designated node sends a complete list of all nodes in the network per col. 6 lines 22 to 48)

It would have been obvious to add presenting to a user a list of the candidate network devices that are qualified to join the cluster of Perlman to logic Backes in order to insure all nodes are aware of the other nodes in the network.

In addition Backes teaches:

Regarding claim 82, wherein the discovery packets comprise layer 2 messages (The Bridge PDU are inherently layer 2 messages per col. 5 line 1 to col. 9 line 62)

Regarding claim 83, wherein the discovery packets comprise MAC message (The Bridge PDU are inherently layer 2 messages or MAC layer messages per col. 5 line 1 to col. 9 line 62)

Regarding claim 84, wherein the discovery packets include cluster-capability information of the candidate device transmitting the discovery packets (The BPDU contain configuration or cluster-capability information of the bridge transmitting the packet per col. 5 line 1 to col. 9 line 62)

Regarding claim 85 wherein the discovery packet includes candidate device is not an active member of another cluster (only members of the network send the BPDU consequently they cannot be members of another spanning tree or cluster per col. 5 line 1 to col. 9 line 62)

Regarding claim 86, further comprising transmitting in response to said adding the information about the neighbor candidate information to the commander network device from each member network which just joined the cluster (Each daughter stores a forwarding list per col. 5 line 1 to col. 9 line 62)

Regarding claim 87, further comprising logic to generate list of network devices qualified to join the cluster (Each daughter stores a forwarding list in Forwarding Data Base or Logic per col. 5 line 1 to col. 9 line 62)

Regarding claim 128, wherein all communication with network devices in the cluster is through a single network address assigned to the commander network device (All communication from the bridges to the root bridge is sent to the root bridge which has a unique identifier per col. 5 lines 19 to line 50)

Referring to claim 88, Backes teaches: A commander network device for discovering and configuring network devices into a cluster said commander network device (Fig 3 is the processor which performs at the root or commander network device ) comprising:

Discovery protocol logic automatically detecting first candidate network device b receiving the discovery packets from the candidate network devices directly connected to the commander

network device; each of the candidate network device directly connected to the commander network device each of the network device periodically transmitting discovery packets including information indicting that the candidate network device is a cluster-capable (The Port and Processing unit per Fig 3 automatically receive and detect BPDU or discovery packets from the bridges in the network or candidates directly trunked to the root. The bridges inherently periodically transmit the BPDU or discovery packets periodically which have their configuration information or cluster-capable per col. 5 line 1 to col. 9 line 62)

Qualification rule circuit circuitry to determine whether any of the candidate devices is qualified to join the cluster by applying qualification rule of the discovery packet received from the candidate device (Processing Unit per Fig 3 or qualification rule circuitry evaluates BPDUs from the bridges or candidate devices in order to determine which bridges will be designated as daughter bridge and which bridge will be designated as a root or designated bridge. All bridges which do not have the lowest path cost are qualified to be daughter bridges per col. 5 line 1 to col. 9 line 62)

Logic to generate a list of the first candidate network devices qualified to join the cluster (Processing unit per Fig 3 or logic which keeps track of forwarding table of bridges qualified to join the spanning tree per col. 5 line 1 to col. 9 line 62)

Backes does not expressly call for: presenting a user a list of the first candidate network devices qualified to join the cluster

Perlman teaches: presenting a user list of first candidate network devices qualified to join the cluster (DN Hello message on partial configuration list per col. 5 line 20 to line 67)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the presenting a user list of first candidate network devices qualified to join the cluster of Perlman to the logic system of Backes in order to speed up the time for the network to converge in order to improve the network performance.

In addition Backes teaches:

Regarding claim 89, wherein the discovery packets comprise layer 2 messages (The Bridge PDU are inherently layer 2 messages per col. 5 line 1 to col. 9 line 62)

Regarding claim 90 wherein the discovery packet includes candidate device is not an active member of another cluster (only members of the network send the BPDU consequently they cannot be members of another spanning tree or cluster per col. 5 line 1 to col. 9 line 62)

Regarding claim 91, further comprising: a database to store the information received form the candidate network device (a forwarding database per Fig 3 and per col. 5 line 1 to col. 9 line 62)

Regarding claim 93, wherein each of the candidate network devices maintains a neighbor device database containing information about other candidate network device directly connected to the candidate network device (Forwarding table per col. 5 line 1 to col. 9 line 62)

Wherein said discovery protocol logic is further to receiving information about neighbor candidate network device from a member network device which just joined the cluster (BPDU are forward from member that just joined and are sent to the root per col. 5 line 1 to col. 9 line 62)

Regarding claim 94, wherein said discovery protocol logic is further to automatically detect second candidate network devices connected to the member network device which just joined the cluster in response to received information about the neighbor candidate network device (The Processing unit and ports or protocol logic per Fig 3 automatically detect BPDUs from all bridges including second bridge or candidate device and stores their forwarding information in the Forwarding Database per Fig 3 and per col. 5 line 1 to col. 9 ine 62)

Regarding claim 95, wherein said logic to generate the list further generate a list of the first and second candidate network device qualified to join the cluster (The Processing unit and ports or protocol logic per Fig 3 automatically detect BPDUs from all bridges including second bridge or candidate device and stores their forwarding information in the Forwarding Database per Fig 3 and per col. 5 line 1 to col. 9 line 62)

Referring to claim 99, Backes teaches: An apparatus for discovering and configuring network devices into a cluster (Fig 3 is the processor which performs at the root or commander network device ) comprising:

Means for automatically detecting first candidate network device b receiving the discovery packets from the candidate network devices directly connected to the commander network device; each of the candidate network device directly connected to the commander network device each of the network device periodically transmitting discovery packets including information indicting that the candidate network device is capable of belonging to a cluster (The Port and Processing unit per Fig 3 or means for automatically receive and detect BPDU or discovery packets from the bridges in the network or candidates directly trunked to the root. The bridges inherently periodically transmit the BPDU or discovery packets periodically which have their configuration information or capability of belonging per col. 5 line 1 to col. 9 line 62)

Means for determining whether any of the candidate devices is qualified to join the cluster by applying qualification rule of the discovery packet received from the candidate device (Processing Unit per Fig 3 or means for determining evaluates BPDUs from the bridges or candidate devices in order to determine which bridges will be designated as daughter bridge and which bridge will be designated as a root or designated bridge. All bridges which do not have the lowest path cost are qualified to be daughter bridges per col. 5 line 1 to col. 9 line 62)

Backes does not expressly call for: presenting to a user a list of the candidate network devices that are qualified to join the cluster

Perlman teaches: presenting to a user a list of the candidate network devices that are qualified to join the cluster (Designated node sends a complete list of all nodes in the network per col. 6 lines 22 to 48)

It would have been obvious to add presenting to a user a list of the candidate network devices that are qualified to join the cluster of Perlman processing unit or means for adding of Backes in order to insure all nodes are aware of the other nodes in the network.

In addition Backes teaches:

Regarding claim 100,wherein the candidate network device transmit the discovery packet to a multicast address (The bridges inherently multicast the BPDU or multicast per col. 5 line 1 to col. 9 line 62)

Regarding claim 101, wherein the discovery packets comprise layer 2 messages (The Bridge PDU are inherently layer 2 messages per col. 5 line 1 to col. 9 line 62)

Regarding claim 102, wherein the discovery packets comprise Media Access Layer message (The Bridge PDU are inherently MAC messages per col. 5 line 1 to col. 9 line 62)

Regarding claim 103, wherein the discovery packets include cluster-capability information of the candidate device transmitting the discovery packets (The BPDU contain configuration or cluster-capability information of the bridge transmitting the packet per col. 5 line 1 to col. 9 line 62)

Regarding claim 104 wherein the discovery packet includes candidate device is not an active member of another cluster (Only members of the network send the BPDU consequently they cannot be members of another spanning tree or cluster per col. 5 line 1 to col. 9 line 62)

Regarding claim 105, means for maintaining at each candidate device a database containing information about neighbor candidate devices (Forwarding Data Base per Fig 3)

Regarding claim 106, further comprising means for transmitting in response to said addition of a member the information about the neighbor candidate information to the commander network device from each member which just joined the cluster (Processing Unit and Port per Fig 3)

Regarding claim 107, means for presenting to a user list of the candidate network devices qualified to join the cluster prior to said adding (Each bridge has a forwarding table or means per col. 5 line 1 to col. 9 line 62)

Regarding claim 129, wherein all communication with network devices in the cluster is through a single network address assigned to the commander network device (All communication from

the bridges to the root bridge is sent to the root bridge which has a unique identifier per col. 5 lines 19 to line 50)

Referring to claim 108, Backes teaches: an apparatus for discovering candidate network devices to be configured into a cluster of network devices and managed via a commander network device (Fig 1) the apparatus comprising:

Means for automatically detecting (Processing unit per Figure 3) first candidate network devices by receiving discovery packets from the candidate network device directly connected to the commander network device The root bridge or commander receives inherent BPDUs or discovery packets from the other bridges (candidate network devices including first candidate) per col. 5 line 1 to col. 9 line 62)the candidate network devices periodically transmitting the discovery packets the discovery packets including information indicating that the candidate network device is capable of belonging to a cluster (The bridges send a BPDU or discovery packet which includes cost or qualification to a member of the cluster per col. 5 line 1 to col. 9 line 62)

Means for determining (Processing unit per Fig 3) whether any of the first candidate network devices is qualified to join the cluster by applying qualification rules to the discovery packets (BPDU are evaluated from the bridges or candidate devices in order to determine which bridges will be designated as daughter bridge and which bridge will be designated as a root or designated bridge. All bridges which do not have the lowest path cost are qualified to be daughter bridges per col. 5 line 1 to col. 9 line 62)

Backes does not expressly call for: presenting to a user a list of the candidate network devices that are qualified to join the cluster

Perlman teaches: presenting to a user a list of the candidate network devices that are qualified to join the cluster (Designated node sends a complete list of all nodes in the network per col. 6 lines 22 to 48)

It would have been obvious to add presenting to a user a list of the candidate network devices that are qualified to join the cluster of Perlman to the Processing Unit or means for presenting of Backes in order to insure all nodes are aware of the other nodes in the network.

In addition Backes teaches:

Regarding claim 109, wherein the discovery packets comprise layer 2 messages (BPDU are bridge PDU or inherently layer 2 messages per col. 5 line 1 to col. 9 line 62)

Regarding claim 110 wherein qualification includes that the candidate device is not an active member of another cluster (only members of the network send the BPDU consequently they cannot be members of another spanning tree or cluster per col. 5 line 1 to col. 9 line 62)

Regarding claim 111, further comprising means storing the information received form the candidate network devices in a database of the commander network device (Each bridge including the root or commander has a has a forwarding table or means which store this information which per col. 5 line 1 to col. 9 line 62)

Regarding claim 112, further comprising means for adding one or more of the first candidate network devices to the cluster each of the added first candidate devices becoming a member of the cluster (The root adds bridges to become daughters or members of the cluster which is performed by the processor means per col. 5 line 1 to col. 9 line 62)

Referring to claim 113, the combination of Backes and Perlman teach: the apparatus of claim 112 and each candidate device maintains a neighbor device database containing information about other candidate network devices directly connected to the candidate network device and each of the member network devices which just joined (Forwarding table per col. 5 line 1 to col. 8 line 62) .

Backes does not expressly call for: transmitting in response to the adding the neighbor device database information to the commander network device from member network device which just joined the cluster

Perlman teaches: transmitting in response to the adding the neighbor device database information to the commander network device from member network device which just joined the cluster (DN Hello which has interrelationship per col. 5 line 20 to col. 6 line 49)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the transmitting in response to the adding the neighbor device database information to the commander network device from member network device which just joined the cluster of Perlman to the system of the combination of Backes and Perlman in order to build a system in which all of the network nodes is aware of the status of nodes in the network.

Referring to claim 115, the combination of Backes and Perlman teach: the apparatus in accordance with claim 113 and processor or means per col. 5 line 1 to col. 8 line 62).

Backes does not expressly call for: automatically detecting at the commander network device, second candidate network devices connected to the member network device which just joined the cluster by receiving the neighbor device database information from the member network device

Perlman teaches: automatically detecting at the commander network device, second candidate network devices connected to the member network device which just joined the cluster by receiving the neighbor device database information from the member network device (DN Hello which has interrelationship per col. 5 line 20 to col. 6 line 49)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add automatically detecting at the commander network device, second candidate network devices

connected to the member network device which just joined the cluster by receiving the neighbor device database information from the member network device of Perlman to the system of the combination of Backes and Perlman in order to build a system in which all of the network nodes is aware of the status of nodes in the network.

In addition Backes teaches:

Regarding claim 116, storing the received neighbor device database information in a database of the commander network device (Each bridge including the root has a forwarding table or database per col. 5 line 1 to col. 9 line 62)

Referring to claim 117, the combination of Backes and Perlman teach: the apparatus in accordance with claim 115 and a processor or means

Backes does not expressly call for: presenting to a user a list of the first and second candidate network devices qualified to join the cluster

Perlman teaches: presenting to a user a list of the first and second candidate network devices qualified to join the cluster (DN Hello which has interrelationship per col. 5 line 20 to col. 6 line 49)
It would have been obvious to one of ordinary skill in the art at the time of the invention to add presenting to a user a list of the first and second candidate network devices qualified to join the cluster of Perlman to the processor of the combination of Backes and Perlman in order to build a system in which all of the network nodes is aware of the status of nodes in the network.

Referring to claim 121, A computer readable medium which stores instructs which are executable on computer in which said instructions (Program memory and Working Memory are capable of storing instructions which can be executed on Processing Unit per Fig 3) performing the method for

automatically detecting candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets indicating that the candidate network device is cluster-capable (All bridges automatically receive and detect BPDU or discovery packets from all of the bridges in the network or candidates. The bridges inherently periodically transmit the BPDU or discovery packets periodically indicating that the bridge is cluster-capable per col. 5 line 1 to col. 9 line 62)

determining whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packet received from the candidate devices (BPDU are evaluated from the bridges or candidate devices in order to determine which bridges will be designated as daughter bridge and which bridge will be designated as a root or designated bridge. All bridges which do not have the lowest path cost are qualified to be daughter bridges per col. 5 line 1 to col. 9 line 62)

Backes does not expressly call for: presenting to a user a list of the candidate network devices that are qualified to join the cluster

Perlman teaches: presenting to a user a list of the candidate network devices that are qualified to join the cluster (Designated node sends a complete list of all nodes in the network per col. 6 lines 22 to 48)

It would have been obvious to add presenting to a user a list of the candidate network devices that are qualified to join the cluster of Perlman to the system of Backes in order to insure all nodes are aware of the other nodes in the network.

Referring to claim 122, A computer readable medium which stores instructs which are executable on computer in which said instructions (Program memory and Working Memory are capable of storing instructions which can be executed on Processing Unit per Fig 3) perform a method for discovering candidate network devices to be configured into a cluster of network devices and managed via a commander network device, the method comprising:

automatically detecting candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets (All bridges automatically receive and detect BPDU or discovery packets from all of the bridges in the network or candidates. The bridges inherently periodically transmit the BPDU or discovery packets periodically per col. 5 line 1 to col. 9 line 62)

determining whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packet received from the candidate devices (BPDU are evaluated from the bridges or candidate devices in order to determine which bridges will be designated as daughter bridge and which bridge will be designated as a root or designated bridge. All bridges which do not have the lowest path cost are qualified to be daughter bridges per col. 5 line 1 to col. 9 line 62)

Backes does not expressly call for: presenting to a user a list of the candidate network devices that are qualified to join the cluster

Perlman teaches: presenting to a user a list of the candidate network devices that are qualified to join the cluster (Designated node sends a complete list of all nodes in the network per col. 6 lines 22 to 48)

It would have been obvious to add presenting to a user a list of the candidate network devices that are qualified to join the cluster of Perlman to the system of Backes in order to insure all nodes are aware of the other nodes in the network.

In addition Backes teaches:

Regarding claim 123, adding one or more of the first candidate network devices to the cluster, each of the added first candidate devices becoming a member of the cluster (Each of the bridges is added to the spanning tree network or cluster because they are binded or configured or managed per col. 5 line 1 to col. 9 line 62)

Regarding claim 124, storing the information received from the candidate network devices in a database of the commander network ( Each of the bridges stores information in the forwarding database per col. 5 line 1 to col. 9 line 62)

3. Claims 74 & 114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Backes

(U.S. Patent No.: 5,018,137) in view of Perlman (U.S. Patent No.: 5,574,860) further in view of

Broka (U.S. Patent No.: 5,809,483)

Referring to claim 74, the method in accordance with claim 73 transmitting user database information and transmitting user database information

The combination of Backes and Perlman do not expressly call for: transmitting using user data gram protocol

Broka teaches: transmitting using user data gram protocol (updates are in UDP per col. 8 lines 20 to 29)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the udp protocol of Broka to transmit the user data base information of the combination of Backes and Perlman in order to utilize a standards based compliant protocol which would improve the performance by making the system inner operable with other standards based systems.

Referring to claim 114, the combination of Backes and Perlman teach: the combination of Backes and Perlman teach: the apparatus in accordance with claim 113 and transmitting user database information.

The combination of Backes and Perlman do not expressly call for: transmitting using user data gram protocol

Broka teaches: transmitting using user data gram protocol (updates are in UDP per col. 8 lines 20 to 29)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the udp protocol of Broka to transmit the user data base information of the combination of Backes and Perlman in order to utilize a standards based compliant protocol which would improve the performance by making the system inner operable with other standards based systems.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 78-80, 96-98, 118-120, & 125-126 are rejected under 35 U.S.C. 102(B) as being anticipated by Backes (U.S. Patent No.: 5,018,137)

Referring to claim 78, Backes teaches: a method for discovering candidate network device to be configured into a cluster of network devices and managed via a commander network device (Fig 1 performs the method), said method comprising:

periodically transmitting discovery packets from the candidate network devices the discover packets including information indicating that the candidate device is cluster-capable (the bridges or candidate devices periodically transmitting the BPDU or discover packets indicating configuration information associated with the bridge or cluster-capable information to be a member of the spanning tree or cluster per col. 5 line 1 to col. 9 line 62)

maintaining at each candidate network device a neighbor database containing information about other candidate network devices directly connected to the candidate network device (Each bridge keeps a forwarding table associated with the neighbor bridge per col. 5 line 1 to col. 9 line 62)

transmitting the information in the neighbor device data base to the commander network device when the candidate network device is added to the cluster (message of information can be transmitted to the designated root or command by a bridge once it has been added to the spanning tree of cluster per col. 5 line 1 to col. 9 line 62) all communication with the network devices in the cluster being through a single network address assigned to the commander network device (All communication from the bridges to the root bridge is sent to the root bridge which has a unique identifier per col. 5 lines 19 to line 50)

In addition Backes teaches:

Regarding claim 79, further comprising receiving at each candidate network device the discover packets from it neighbor candidate device and updating at each candidate network device the neighbor device database in response to the received discovery packets (Each bridge updates the forwarding table based upon BPDU information per col. 5 line 1 to col. 9 line 62)

Regarding claim 80, wherein the discovery packets comprise layer 2 messages (The Bridge PDU are inherently layer 2 messages per col. 5 line 1 to col. 9 line 62)

Referring to claim 96, Backes teaches: A network device (Fig 3) comprising:

Discovery protocol logic to periodically transmit discovery packets the discovery packets in including information including the network device is cluster -capable (The Port and Processing unit per Fig 3 automatically transmits BPDU or discovery packets to the root. The bridges inherently periodically transmit the BPDU or discovery packets periodically which have their configuration or cluster-capable information per col. 5 line 1 to col. 9 line 62)

a neighbor device data base to store information about other candidate network device directly connected to the network device, other candidate network device being capable of configured into a cluster (Forwarding Data Base per Fig 3)

Logic to transmit the information in the neighbor device data base to the commander network device when the network device is added to the cluster (Processing unit and port per Fig 3 or logic which sends configuration BPDU packets to the root or commander per col. 5 line 1 to col. 9 line 62) all communication with the network devices in the cluster being through a single network address assigned to the commander network device (All communication from the bridges to the root bridge is sent to the root bridge which has a unique identifier per col. 5 lines 19 to line 50)

In addition Backes teaches:
Regarding claim 97, wherein said discovery protocol logic further to receive the discovery packet from its neighbor candidate devices said network device further comprising logic to updating the neighbor database in response to the received discovered packets (Port, Processing Unit and Forwarding Database per Fig 3)

Regarding claim 98, wherein the discovery packets comprise layer 2 messages (The Bridge PDU are inherently layer 2 messages per col. 5 line 1 to col. 9 line 62)

Referring to claim 118, Backes teaches: an apparatus for discovering candidate network devices to be configured into a cluster of network devices and managed via a commander network device (Fig 1) the apparatus comprising:

Means for periodically transmitting discovery packets form the candidate network devices (Processing unit per Fig 3) the discovery packets including information indicating that the candidate network device is capable of belonging to a cluster (The bridges send a BPDU or discovery packet which includes cost or qualification to a member of the cluster per col. 5 line 1 to col. 9 line 62)

Means for maintaining at each of the candidate network devices a neighbor device database containing information about other candidate network devices directly connected to the candidate network device (Forwarding database per Fig 3 and per col. 5 line 1 to col. 9 line 62)

Means for transmitting (Port per Fig 3 and per col. 5 line 1 to col. 9 line 62) the information in the neighbor device data base to the commander network device when the candidate network device is added to the cluster (message of information can be transmitted to the designated root or command by a bridge once it has been added to the spanning tree of cluster per col. 5 line 1 to col. 9 line 62)

In addition Backes teaches:

Regarding claim 119, further comprising means for receiving (Port per Fig 3) at each of the candidate network devices, the neighbor device database in response to the received discovery packets (col. 5 line 1 to col. 9 line 62) means for updating (Processing unit per Fig 3) at each of the candidate network devices, the neighbor device database in response to the received discovery packet (col. 5 line 1 to col. 9 line 62)

Regarding claim 120, wherein the discovery packets comprise layer 2 messages (BPDU are bridge PDU or inherently layer 2 messages per col. 5 line 1 to col. 9 line 62)

Referring to claim 125. A computer readable medium which stores instructs which are executable on computer in which said instructions (Program memory and Working Memory are capable of storing instructions which can be executed on Processing Unit per Fig 3) performing the method for

periodically transmitting discovery packets from the candidate network devices the discover packets including information indicating that the candidate device is capable of belonging to a cluster (The bridges inherently periodically transmit BPDU or discovery packets including their configuration information of capable of belonging to the spanning tree per col. 5 line 1 to col. 9 line 62)

maintaining at each candidate network device a neighbor database containing information about other candidate network devices directly connected to the candidate network device (Each bridge maintains a forwarding table per col. 5 line 1 to col. 9 line 62)

transmitting the information in the neighbor device data base to the commander network device when the candidate network device is added to the cluster (As soon as neighboring bridge has been added the BPDU information can be forwarded to the root per col. 5 ine 1 to col. 9 line 62)

In addition Backes teaches:
Regarding claim 126, wherein said method further comprises:

Receiving at each of the candidate network devices the discovery packets from its neighbor candidate device and updating at each of the candidate network devices the neighbor device database in response to the received discovery packets (Forwarding Data Base per Fig 3 is updated) all communication with the network devices in the cluster being through a single network address assigned to the commander network device (All communication from the bridges to the root bridge is sent to the root bridge which has a unique identifier per col. 5 lines 19 to line 50)

***Claim Objections***

6. Claims 66-80, 88-98, 108-120, 122-126, are objected to because of the following informalities: The examiner objects to the usage of "cluster-capable" which is in claims 66, 78, 88, 96, 108, 118, & 122, & 125-126 because "cluster-capable" can be interpreted as an intended use which is a non-positive recitation of a claim limitation. The examiner recommends that the applicant amend the claim to positive recitation of a claim limitation. Appropriate correction is required.

***Response to Amendment***

7. Applicant's arguments filed 6/24/08 have been fully considered but they are not persuasive.

The examiner respectfully disagrees with the applicant argument relative to the claim interpretation that the broadest claim limitation should be interpreted as "all communication with network devices in the cluster being through a single network address assigned to the commander network device" means "all communications between the network devices to the commander network device is through a single network address which has been assigned to the network commander and all communication from the network commander to the network device is through a single network address which has been assigned to the commander" .

The examiner has interpreted the claim limitation of "all communication with network devices in the cluster being through a single network address assigned to the commander network device" as "all communications between or through the network devices to the commander network device is through a single network address which has been assigned to the network commander.

Backes teaches: all communication with the network devices in the cluster being through a single network address assigned to the commander network device (All communication from the bridges to the root bridge is sent to the root bridge which has a unique identifier per col. 5 lines 19 to line 50)

The applicant has broadly claimed "presenting to a user a list of the candidate network devices that are qualified to join the cluster"

The examiner respectfully disagrees with the applicant argument that the combination of references do not expressly call for: "presenting to a user a list of the candidates network devices that are qualified to join the cluster"

Backes teaches: A method for discovering and configuring network devices into a cluster said method (Fig 1 performs the method) comprising:

automatically detecting candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets (All bridges automatically receive and detect BPDU or discovery packets from all of the bridges in the network or candidates. The bridges inherently periodically transmit the BPDU or discovery packets periodically per col. 5 line 1 to col. 9 line 62)

determining whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packet received from the candidate devices (BPDU are evaluated from the bridges or candidate devices in order to determine which bridges will be designated as daughter bridge and which bridge will be designated as a root or designated bridge. All bridges which do not have the lowest path cost are qualified to be daughter bridges per col. 5 line 1 to col. 9 line 62)

Backes does not expressly call for: presenting to a user a list of the candidate network devices that are qualified to join the cluster

Perlman teaches: presenting to a user a list of the candidate network devices that are qualified to join the cluster (Designated node sends a complete list of all nodes in the network per col. 6 lines 22 to 48)

It would have been obvious to add presenting to a user a list of the candidate network devices that are qualified to join the cluster of Perlman to the system of Backes in order to insure all nodes are aware of the other nodes in the network.

The examiner respectfully disagrees with the applicant argument that the reference Perlman needs to say anything about the cluster because the primary reference Backes teaches the nodes desiring to join the tree or cluster.

Backes teaches: A method for discovering and configuring network devices into a cluster said method (Fig 1 performs the method) comprising:

automatically detecting candidate devices by receiving discovery packets from the candidate devices, the candidate devices periodically transmitting the discovery packets (All bridges automatically receive and detect BPDU or discovery packets from all of the bridges in the network or candidates. The bridges inherently periodically transmit the BPDU or discovery packets periodically per col. 5 line 1 to col. 9 line 62)

determining whether any of the candidate devices is qualified to join the cluster by applying qualification rules to the discovery packet received from the candidate devices (BPDU are evaluated from the bridges or candidate devices in order to determine which bridges will be designated as daughter bridge and which bridge will be designated as a root or designated bridge which will be a part of the tree or cluster. All bridges which do not have the lowest path cost are qualified to be daughter bridges per col. 5 line 1 to col. 9 line 62)

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Conclusion***

8.0 Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT W. WILSON whose telephone number is (571)272-3075. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571/272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert W Wilson/
Primary Examiner, Art Unit 2619

RWW